SPESIFIKASI TEKNIKAL

SEBUTHARGA BIL. 1/2019:

**BEKALAN / PERKHIDMATAN PERKAKASAN SERVER UNTUK
SISTEM PERAKAUNAN SAGA**

1. Maklumat Projek

Sistem SAGA merupakan Sistem Perakaunan utama SME Corp. Malaysia yang dibangunkan oleh syarikat Century Software Sdn. Bhd. Sistem ini memastikan proses perakaunan dapat dijalankan dengan efisyen dan teratur. Perkakasan server untuk sistem ini perlu diganti dengan perkakasan baru memandangkan server sedia ada telah mencapai usia 7 tahun. Selain itu, perolehan ini juga termasuk konfigurasi semula sistem SAGA dan pembelian untuk *backup solution* memandangkan sistem *backup* yang sedia ada telah *obselete* dan tiada sokongan teknikal daripada pihak vendor.

2. Objektif

Perkakasan sedia da perlu diganti dengan perkakasan baru bagi memastikan sistem dapat terus beroperasi dan stabil serta mengelakkan masalah kegagalan perkakasan memandangkan perkakasan sedia ada telah *obselete.*

BIL	PERKARA	BUTIR-BUTIR KERJA	PEMATUHAN (Sila √ atau x)	CATATAN *
1. Application Server				
	Quantity	1 Unit		
	Minimum Specifications :			
	Rackmount Unit:	Server must be rack mountable form factor		
		Max 2U server		
	Processor:	Min Intel Xeon Gold 6130 16C 125W 2.1GHz Processor		
		Min 2.1GHz		
		Upgradeable to 2 processors physically		
	Chipset	Min Intel C624 "Lewisburg" chipset or equivalent		
	Memory	Min 128GB RAM with TruDDR4 2666 MHz (2Rx8 1.2V) RDIMM		
		Max Support up to 3TB		

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	Storage	Hard disk at least 4 units of 2.5" 1.2TB 10K SAS 12Gb Hot Swap 512n HDD		
		Max Hard disk support 24 bay/slots		
		1 x External USB DVD-RW Optical Disk Drive		
	Interface/Slots	Min 4 ports x 1GbE LOM		
		1x RJ-45 10/100/1000 Mb Ethernet systems management port		
		Must be able to connect to existing network infrastructure.		
		One port can optionally be shared with the XCC management processor for Wake-on-LAN and NC-SI support.		
		Support Up to 24 disk slots that supports anybay technology to allow an intermix of SAS & SATA in the same backplane to allow flexibility of disks within the same architecture		
		Proposed model supports up to 7 slots with the following feature: LOM card slot Slot 1: PCIe 3.0 x16 or PCIe 3.0 x8; full-height, half-length (PCIe x16 slot is double-wide) Slot 2: PCIe 3.0 x8; full-height, half-length (not present if the slot 1 is PCIe x16 or slot 3 is ML2 x16) Slot 3: PCIe 3.0 x8, or ML2 x8, or ML2 x16; full-height, half-length Slot 4: PCIe 3.0 x8; low profile (vertical slot on system planar) Slot 5: PCIe 3.0 x16; full-height, half-length Slot 6: PCIe 3.0 x16; full-height, half-length Slot 7: PCIe 3.0 x8 (dedicated to an internal storage controller)		
	Power Supply	Proposed server must come with at least 2 x 750W (230V/115V) Platinum Hot-Swap Power Supply		

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	Operating System	Microsoft® Windows® Server 2016 Std Edition		
	Warranty	Min 3-Years On-Site Warranty inclusive of Parts and Lab our		
		24 x 7 support coverage period/ 4 hrs response time		
	Management Software	XCC embedded management, virtual-appliance based management controller for managing multiple servers, Light path diagnostics for local failure detection and reporting, with optional LCD diagnostics pull-out pane		
		The server should be managed by a management tool that is O/S independent into facilitate ease of management on in terms of deployment and management using a virtual-appliance that is integrated with the out-of-band management system and is able to collect system analysis logs which can be sent over as compressed XML files for service and support. Additionally the server must support the management tool to assign firmware-compliance policies to the server to ensure compliance on the end-points. No agents are allowed on the servers that are to be managed and the management system must be in a form of a virtual appliance		
	Other requirements	Built-in LEDs on the planar to ensure faster resolution time for parts replacement and maximum uptime.		
		HTML-5 out-of-band management system that is agentless.		
		Front-USB port for servicing with a supported mobile device with the mobile-app. No usage of NFC-based systems are allow for the servicing and management.		
		Vendor must be rated most-reliable for the year 2017 in the x86 server-market from an independent 3rd party study. Please provide		

BIL	PERKARA	BUTIR-BUTIR KERJA	PEMATUHAN (Sila √ atau x)	CATATAN *
		documentation as proof		
		All proposed equivalent items shall be specified in detail in terms of technical specifications, model and version number.		
		All other related software, material, components and cabling which are required to ensure full integration of the proposed solution with existing infrastructure must be provided.		
		The tenderer must make sure all the integration workable and successful		
		User, operations and technical instruction manual must be included.		
		The proposed solution (hardware and software) must be installed, configured, tuned and commissioned by principal's or certified engineer. Please provide engineer's certification and SOW for said task.		
	Brochures & Literature	All hardware above (please specify all proposed products web link)		
2. Backup Server				
	Quantity	1 Unit		
	Minimum Specifications :			
	Rackmount Unit:	Server must be rack mountable form factory		
		Max 2U server		
	Processor:	Min Intel Xeon Silver 4110 8C 85W 2.1GHz Processor		
		Min 2.1GHz		
		Number of processor: Min 1 units		
		Upgradeable to 2 processors physically		
	Chipset	Min Intel C624 "Lewisburg" chipset or equivalent		

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	Memory:	Min 32GB RAM with TruDDR4 2666 MHz (2Rx8 1.2V) RDIMM		
		Max Support up to 3TB		
	Storage	Hard disk at least 5 units of 2.5" 300GB 10K SAS 12Gb Hot Swap 512n HDD		
		Max Hard disk support 24 bay/slots		
		1 x External USB DVD-RW Optical Disk Drive		
	Interface/Slots	Min 4 ports x 1GbE LOM		
		1x RJ-45 10/100/1000 Mb Ethernet systems management port		
		Must be able to connect to existing network infrastructure.		
		One port can optionally be shared with the XCC management processor for Wake-on-LAN and NC-SI support.		
		Support Up to 24 disk slots that supports anybay technology to allow an intermix of SAS & SATA in the same backplane to allow flexibility of disks within the same architecture		
		Proposed model supports up to 7 slots with the following feature: LOM card slot Slot 1: PCIe 3.0 x16 or PCIe 3.0 x8; full-height, half-length (PCIe x16 slot is double-wide) Slot 2: PCIe 3.0 x8; full-height, half-length (not present if the slot 1 is PCIe x16 or slot 3 is ML2 x16) Slot 3: PCIe 3.0 x8, or ML2 x8, or ML2 x16; full-height, half-length Slot 4: PCIe 3.0 x8; low profile (vertical slot on system planar) Slot 5: PCIe 3.0 x16; full-height, half-length Slot 6: PCIe 3.0 x16; full-height, half-length Slot 7: PCIe 3.0 x8 (dedicated to an internal storage controller)		

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	Power Supply	Proposed server must come with at least 2 x 750W (230V/115V) Platinum Hot-Swap Power Supply		
	Operating System	RHEL Server Physical or Virtual Node		
	Warranty	Min 3-Years On-Site Warranty inclusive of Parts and Lab our		
		24 x 7 support coverage period/ 4 hrs response time		
	Management Software	XCC embedded management, virtual-appliance based management controller for managing multiple servers, Light path diagnostics for local failure detection and reporting, with optional LCD diagnostics pull-out pane		
		The server should be managed by a management tool that is O/S independent into facilitate ease of management on in terms of deployment and management using a virtual-appliance that is integrated with the out-of-band management system and is able to collect system analysis logs which can be sent over as compressed XML files for service and support. Additionally the server must support the management tool to assign firmware-compliance policies to the server to ensure compliance on the end-points. No agents are allowed on the servers that are to be managed and the management system must be in a form of a virtual appliance		
	Other requirements	Built-in LEDs on the planar to ensure faster resolution time for parts replacement and maximum uptime.		
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		Vendor must be rated most-reliable for the year 2017 in the x86 server-market from an independent 3rd party study. Please provide documentation as proof		
		All proposed equivalent items shall be specified in detail in terms of technical specifications, model and version number.		
		All other related software, material, components and cabling which are required to ensure full integration of the proposed solution with existing infrastructure must be provided.		
		The tenderer must make sure all the integration workable and successful		
		User, operations and technical instruction manual must be included.		
		The proposed solution (hardware and software) must be installed, configured, tuned and commissioned by principal's or certified engineer. Please provide engineer's certification and SOW for said task.		
	Brochures & Literature	All hardware above (please specify all proposed products web link)		
3. Backup Solution				
1.	Brand and Version (Must be specified by Vendor):			
2.	The proposed solution had to be scalable for large enterprise deployment sizes, as well as no limit on file size and document count.			
3	The proposed solution needs to base on end-user-server architecture, where the end-user component is installed at the endpoint, and the server component is used for application administration and manages the backup storage.			
4.	The proposed backup solution shall be managed through web-based GUI interface allow remote connection through mobile devices.			

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5.	Dashboard feature for administrators to view statistics including, but not limited to:	Failed backups		
		Successful backup		
		Device backup/restore failure details		
		Device backup/restore success details		
		Service monitoring		
6.	The proposed enterprise end-user backup solution must be able to generate report based on a defined period, including but not limited to:	Number of licenses utilized		
		Total disk space usage		
		Administrators' login/logout (including failed login)		
		Type of user's devices		
		License expiry.		
7.	The proposed solution must be able to support user privacy mode. It should allow users to control the visibility of sensitive data to other users and the enterprise end-user backup solution administrator			
8.	Techniques to boost performance must be applied for data-in-transit and data-at-rest including, but not limited to:	Fast incremental backup (changed block tracking)		
		Reverse incremental restore (flashback)		
		Compression		
9	The proposed solution must allow various backup options. It should support:	Ad-hoc backup		
		Scheduled backup		
		Automatic restart if the backup fails		
		Resumed backup – start from the point where it was interrupted.		
		Automatic reconnect in-case of network disconnect during the backup		
10.	Data security support minimum AES 256-bit encryption for data-in-transit and data-at-rest. Data must uphold the highest security standard, where unauthorized users have no access to data			

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11.		The proposed solution should have migration capabilities from physical to virtual, virtual to virtual, physical to cloud or vice versa.		
12.		The proposed solution should allow storing backup to offsite location in vendor's cloud.		
13.		The enterprise end-user backup solution must be able to enforce network and CPU throttling when backing up or restoring data, as to have minimal impact on overall network performance as well as at the affected end point.		
14.		Data retention policies must be configurable. Users are able to view the version history and retrieve the desired file version.		
15.		The proposed solution must be capable of replicate the backup files up to 4 location with separate retention policy.		
16.		The installation & uninstallation of agent to the machines need to be on fly without involving any downtime/reboot.		
17.		The proposed solution must support virtualization technologies including agentless backup and migration capabilities between various hypervisor and physical machines.		
18.		The proposed solution must have ability to automate recovery process.		
19.	Platform support (Protected servers)	Proposed solution must be able to protect heterogeneous operating system platforms including Windows and Linux.		
		Proposed solution protection must not be resource intensive and must not consume incur more than 5% overhead		
		Proposed solution protection must be network based (LAN or SAN) and not host based (resource intensive on the host)		
		Proposed solution can run using the existing LAN infrastructure		
20.	Platform support (Manager)	Proposed solution must able run on various Linux or its variants such as RedHat, CentOS and Oracle Linux		
		Proposed solution must be able to scale with the environment and include high-		

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		availability functionality to ensure SLA for backup and recovery services		
		Proposed solution must be able to utilise different types of backend storage to accommodate disk based backups		
		Proposed solution must be able to group storage into different tiers, addressing different levels of protection and function (eg. FC disks -> mirrors, SATA disks -> snapshots, SSD disks -> cache)		
		Proposed solution must be able to make use of higher performance disks (eg. SSDs) to enhance storage IO performance		
21.	Snapshot based backups	Proposed solution must on disk based snapshots must not be file based but instead be disk based		
		Proposed solution must on disk based snapshots must be presented as the original disk format		
		Proposed solution must be able to protect both OS (minimal Windows) and data disks		
		Proposed solution must be able to protect both Operating System and data located in local disks wihtout data migration		
		Proposed solution must be able protect external storage (eg. DAS or SAN) without data migration or change of existing storage		
		Proposed solution must be able to take disk based snapshots for backups with a minimum of 1000 copies		
		Proposed solution must on disk based snapshots must only keep delta changes since the previous snapshot was taken to reduce overall size		
		Proposed solution must on disk based snapshots must be able to integrate with all leading business class applications (eg. Exchange, SQL, Oracle, etc.) to ensure the		

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		consistency and integrity of the snapshots taken		
		Proposed solution must capable to work independently of production storage to ensure that there is no impact of the production environment (such as during snapshot operations, production storage IO cannot be stopped)		
		Proposed solution must be able to define different Recovery Point Objectives for different classes of services (eg. RPO 24 hours for non-critical services, RPO 1 hour for critical services)		
22.	Local Recovery Method	Proposed solution must allow disks of any size to be mounted over the same time frame and recovery can begin immediately regardless of data size		
		Proposed solution must on disk-based snapshots must not require any conversion from one format to another		
		Proposed solution Recovery Time Objective (RTO) must be within 1 hour for local recovery at Production Data Centre on any server failures		
		Proposed solution Recovery Time Objective (RTO) must be within 4 hours from declaring disaster in Disaster Recovery Centre		
		Proposed solution recovery must be able to be performed over multi protocol mode (eg. iSCSI over LAN and FC over SAN)		
		Proposed solution must be able to integrate with virtualisation platforms such as Vmware and HyperV to reduce number of standby servers in the environment using a pass through disk method		
		Proposed solution must be able recover entire volume, such as D;\ even the entire volume had formatted		

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		Proposed solution must able support recover Operating Systems through SAN booting or a single unified recovery media		
23.	Replication	Proposed solution for replication must be able to track changes at the sector level (512 bytes) and replicate only changes across		
		Proposed solution must perform policy-driven asynchronous replication over IP with full security, high bandwidth efficiency, and high database transaction integrity.		
		Proposed solution must perform for local based replication the system provides delta-based, policy-driven asynchronous replication within one appliance or server over Fibre Channel SANs, or can be used with IP-based Fibre Channel extenders for wide area		
		Proposed solution must perform the continuous data replication from production server to Dedicated Storage Server at DR using TCP/IP or RUDP protocol		
		Proposed solution able to perform replication using a regular network connection via TCP or RUDP		
24.	Standard Operating Procedure	Proposed solution must be able to maintain similar Standard Operating Procedure (SOP) for both Production and DR site on recovery methods		
25.	Failover During Data Recovery	Proposed solution must include an orchestration platform to automate the failover process that provides a single interface to perform the following:		
		Failover automation must be able to automatically virtualise physical servers (P2V) at the DR site		
		Failover automation must be able to automatically to seamlessly move between similar (eg. Vmware to Vmware) or different		

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		(eg. Vmware to HyperV) hypervisor hosts (V2V) at the DR site		
		Failover automation must be able to automatically mount replicas onto physical servers at the DR site		
		Failover automation must be able to change the network configuration to match the environment at the DR site		
		Recovery of servers must be done using a service oriented approach by recovering servers related to a service as a group, not individually		
		Failover automation must be able to automatically reverse the replication to enable the DR site to make use of the latest available replicas and act as the replication source (DR -> Production)		
26.	Failback After Data Recovery	Proposed solution must include an orchestration platform to automate the failback process that provides a single interface to perform the following:		
		Failback automation must be able to automatically recover the original physical servers (V2P) at the production site through SAN booting		
		Failback automation must be able to automatically recover the original physical servers (V2P) at the production site through a single unified recovery media		
		Failback automation must be able to automatically to seamlessly move between similar (eg. Vmware to Vmware) or different (eg. Vmware to HyperV) hypervisor hosts (V2V) at the production site		
		Failback automation must be able to change the network configuration to match the environment at the production site		

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		Recovery of servers must be done using a service oriented approach by recovering servers related to a service as a group, not individually		
		Failback automation must be able to automatically reverse the replication to enable the production site to make use of the latest available replicas and act as the replication source (Production -> DR)		
27.	Long Term Retention	Proposed solution must be able to seamlessly incorporate tape based backup into the long term retention strategy		
		Proposed solution must be able to utilise any existing tape based backup solution for the long term retention strategy		
		Proposed solution must be able to perform granular file level restore from tapes should the need arise		
28	Installation, Maintenance and Services	The maintenance services shall covers all range of hardware and application as listed as mention in this tender document. The scope of maintenance services are specified hereafter.		
		Vendor must provide services on prime shift working days from Monday to Friday (8.00 AM – 5.00 PM) (excluding Public Holidays) as a Coverage Hours		
		All hardware installation and maintenance must be serviced by technical representative certified by the principal of the product **(Vendor must attach the support letter from principal)**		

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		Vendor must have at least two (2) certified technical representative of SAGA application **(Vendor must attach the copy of certification together with tender submission)**		
		Vendor must commission backup and recovery of SAGA application and database in the DRC **(must attach LOA from SAGA vendor)**		

4. To supply, deliver, install, configure, integrate all related application licenses needed for the server.

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	Server Configuration Services	Hardware Commissioning		
		Operating System (OS) Installation, VMs setup and Configuration		
		Database Installation and Configuration		
		SAGA Application and Database Migration		
		Web Server Installation and Configuration		
		Printer / SSL / Backup		
		Testing of All Modules and Portal		
		Project Management		
		Provide support services for application within the warranty period of at least one (1) year from the issuance of the Final Acceptance.		

5. Project Duration

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1	Project Duration	The vendor must complete the project within 6 months		

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6. Documentation				
1	Documentation	Provide complete set of documentation covering hard copy and soft copy, at a minimum, the server details and configuration.		

* sila nyatakan di ruangan ini jika terdapat maklumat tambahan berkaitan tawaran yang dikemukakan atau kemukakan kertas cadangan tambahan jika ruang tidak mencukupi

Saya / Kami memperakui maklumat yang diberikan adalah benar.

....
Nama   :

Jawatan   :

Tarikh   :

Cop Syarikat :